

## Fewer crashes caused by pilots

By Alan Levin, USA TODAY

WASHINGTON — Deadly mistakes by pilots — the No. 1 cause of commercial airline crashes — have decreased dramatically over the past decade. But a new concern has emerged in the government's efforts to make air travel safer: poor maintenance.

A USA TODAY analysis of 22 years of crash data and interviews with more than two dozen aviation analysts suggest that innovative training and modern jets with better warning systems have helped pilots quickly correct what might once have been fatal mistakes. (Related chart: [Maintenance accidents, 1995-2001](#))

As a result, crashes caused by pilots — about two-thirds of all accidents from the 1960s through the mid 1990s — fell to about half of all crashes from 1995 through 2001.

USA TODAY evaluated the 158 most severe domestic airline crashes on commercial planes with 15 or more seats from 1980 through 2001. The list includes accidents involving similar-sized cargo planes. The causes of the accidents were based on findings by the National Transportation Safety Board. It has yet to determine the causes of four of the five domestic airline accidents since 2001.

But as the industry focused on improvements in the cockpit, tackling maintenance problems remained a lower priority. The consequence: Accidents caused by maintenance errors have become the second-most-likely category of accident since 1995. More than 30% of accidents from 1997 through 2001 were caused at least in part by maintenance mistakes.

Such errors include a mistake by mechanics that caused an Air Midwest plane to slam into the ground after takeoff on Jan. 8, 2003. Twenty-one people died. Thursday, the National Transportation Safety Board issued recommendations in that crash investigation aimed at improving maintenance at all airlines.

The federal government requires minimal training for mechanics after they've been licensed. And airlines have opposed some improvements in maintenance, in part because they say they're too

costly. Still, accident investigators and airline industry sources say they see no evidence that maintenance is worse today than in the past.

The newspaper analyzed accidents from 1980 through 2001, the last year for which the NTSB has determined the causes of most crashes.

The analysis shows that:

- The rate of accidents and the number of people killed each year have fallen significantly. In the 1980s, accidents occurred nine times per 10 million flights. That fell to about six per 10 million flights in the 1990s. Fatalities averaged 186 per year in the 1980s and dropped 40% — to 111 — in the 1990s, even as the number of flights increased.
- Mistakes by pilots remained the most common cause of accidents, but the category declined more sharply than the overall accident rate. Accidents attributed to pilots dropped from six per 10 million flights in the 1980s to below four per 10 million in the 1990s. From 1995 through 2001, the rate dropped below three per 10 million. There were 10.6 million domestic flights in 2002.
- Maintenance errors emerged as the second-most-likely cause of accidents. Maintenance caused an average of slightly more than one crash per 10 million flights in the 1990s. It was the only major category of accidents that did not decline.

The Commercial Aviation Safety Team, a joint federal and industry group that helps set the agenda for safety improvements, last year identified maintenance as a "remaining risk."